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THE PLACE OF HUMAN BIOLOGY IN ANTHROPOLOGY AND ITS UTILITY IN THE SERVICE OF THE NATION

S. S. SARKAR

ONE of the chief aims of any science lies in its usefulness in the service of mankind. With this end in view it must popularize its results and indicate in the clearest possible language, devoid of all technicalities, its method of use. Such an attempt has successfully been made in the recent publication, "Rebuilding Family Life in the Post-war World", which combines in it not only the theoretical researches of human biology and sociology but also gives a set of recommendations for the guidance of the lay public. Thus one of the recommendations at the end of Dr. Eliot Slater's chapter on "The psychological aspects of family life" is as follows: "That biology, especially human biology, should be taught in all State schools, as a cultural subject."[a] This is how we can utilize human biology to the best service of humanity.

During the past few years the science of human biology has been able to elucidate many problems of human welfare and it will be worth-while mentioning a few of them. If bottle-feeding predisposes babies to disorders that may produce deaf-mutism, especially rachitis and otitis media supp., as Lindenov's[19] researches show, we must do away with feeding bottles. Erik Agduhr's[1] researches on the endocrines have established "that married peoples live longer than the unmarried ones and that this increase of the span of life is more marked among women than men". He has also shown that cancer of the breast and diseases of the heart are more frequent among unmarried women than among the married.

Agduhr's researches also indicate the effect of normal sexual functions in raising the resistance to a number of toxic agents, *e. g.*, paratyphus cultures dipthiria toxin, *etc.*, in both the sexes. This is to a certain extent borne out by the fact that the normally reproduc-

ing women are comparatively free from disease. If normal sexual functions can heighten the resistance we can also expect the contrary, *i. e.*, the lowering of resistance due to abnormal sexual functions. As such birth control methods, as are in vogue today, are all abnormal, and their effects on the individual remain to be seen. If there is really an adolescent sterility interval, between menarche and first conception, as Ashley Montagu[2] has shown, we must change our ideas of birth control. It had its triumph, at least, during the earlier ages of women on this natural phenomenon. This associated with the Ogino-Knaus conception of the periodic fertility and sterility in women necessitates an entire reorientation of our old ideas as regards birth control. If the Ogino-Knaus method of natural birth control proves to be the ideal method, it should be popularized. If the majority of the children born at the higher ages of the mother are likely to be twins or mentally affected or malformed (Penrose)[27] we must see that no women give birth to babies after they are 30 years of age and thereby expose the mothers to the grave risks of twin labour or enlarge the inmates of mental asylums. That the endocrines play the major role in the maintenance of health, youth and beauty, should be emphasized and that cosmetics have not much place in them. A woman is most beautiful during the first few months of pregnancy as all the endocrines of the body begin to function at this time. These are a few of the achievements of human biology which vitally concern all of us.

NEGLECTED FACTS OF HUMAN BIOLOGY

(*a*) *Menarcheal age.*—It will be seen from the previous pages how the science of human biology has already achieved so many useful humanitarian purposes. In India we have just begun. In this country registration of all births, marriages and deaths are not compulsory and with the present trend of lesser ceremonies in our social life these dates are rarely remembered. In a recent enquiry by one of my students on the menarche of Calcutta high school girls it was seen that quite a large percentage of these educated girls did neither remember the date of birth nor the date of such an important biological event of their own lives. In this respect they stand in no way better than the rural girls. This is a great bar to having an accurate statistics on any problem of human biology.

The importance of knowing the menarcheal ages of our populations will be evident from our previous remarks on adolescent sterility interval. They are essential factors in any studies on growth.

We do not know anything of its relationship with the pre. menarcheal acceleration in growth.

Prof. F. A. E. Crew[8] in his Presidential Address on "Puberty and Maturity" before the 2nd International Congress for Sex Research remarked: "To the sociologist and anthropologist, the fact that many social customs, attitudes and laws affecting human relationships refer directly to these biological phenomena, must make it clear that it is entirely necessary to know what is their nature and when they appear during the development of the individual, since until these things are known we can never hope accurately to assess the worthiness of the customs, attitudes and laws which are based upon them. There will be general agreement with the dictum that any custom and any law which is not in harmony with established scientific fact may well be a bad custom and a bad law."

A correct appraisal of the menarcheal age of our girls is an urgent need, without which no social laws, specially those relating to marriage, can be made. A few have been made in this country and all of them not being in harmony with established scientific facts have all attained the status of "bad custom" and "bad law". What was the correct menarcheal age of the Indian girls before the Age of Consent Enquiry Committee sat for its report ?

It has been found in the western countries that the average menarcheal age of the girls are gradually going down. In Sweden[18] during the last 50 years the average age at menarche is going down at the average rate of 10 days per year. In the U. S. A. whites[22] there was an acceleration in menarche amounting to 4 months between the years 1930 and 1938. The negroes[22] of U. S. A. also show the same trend. During the 25 years (1910/1914 to 1935/1940) the sexual maturity of the girls has speeded up by 1 year and 2½ months. What is the state of affairs in our country ? We have no authentic data at all on which we can build any idea as to whether the same process is also going on in this country. At the same time the few data that we have, stand condemned in the opinion of experts like Prof. Crew and he is right in stating so. All of you will admit the vital necessity of such data when this country faced so many controversies on early marriages—the Child Marriage Restraint Act, the Age of Consent Committee, *etc.* If the girls of this country are gradually attaining earlier maturity, can we still accept the findings of the Age of Consent Committee ? A progressive or a retrogressive rate can only be judged after long years of observation. How do we compare ourselves with 50 years of observation of Sweden ?

It is pertinent to quote Prof. Crew here as it has also some bearing with my introductory remarks: "Commonly a comparison between some civilized community and a savage people has been made; but such studies must be regarded as possessing little value for the reason that it has not been shown whether those communities in which there is no Registrar-General and no compulsory registration of births can maintain accurate records of age".

Sexual maturity is a genetic character and Crew is of opinion that earliness is dominant over lateness. It is manifested variably in different social scales—girls of higher social status menstruate earlier than those in poorer circumstances. In spite of the defective nature of Indian data as pointed out by Crew, let us examine the few series we have from India. We have to wait for many long years before we have compulsory registration of all births, marriages and deaths. As an anthropologist, interested in the 25 million aborigines of this country, I am afraid, we have to wait longer before we shall have these biological factors of theirs properly recorded for scientific utilization.

The first Indian data on menarche were collected by Dr. Madhusudan Gu [2] from Calcutta Hindu Bengali families and published in Allan Webb's *Pathologica Indica* in 1848. This data comprised 37 women which yielded an average menarcheal age of 12·38±0·11 years. Curjel[9] provided the second set of data which was drawn from different parts of India. She classified them only according to religious communities. Knowing full well the heterogenous nature of the Indian peoples, it is difficult to utilize these data for any comparative study. In this respect Gupta's data though comprise only 37 individuals, are homogeneous and valuable, being 102 years old. Curjel's figures are:

Hindu (268)—13·62±0·11 years.
Muslims (140)—13·64±0·16 years.
Christians (81)—13·69±0·17 years

Combined average (489)—13·64 years.
College girls (56)—13·88±21 years.

The third series of data was collected in connection with the Report of the Age of Consent Committee and published along with its report in 1929. These data were collected from Calcutta and number two thousands. The entire data have, however, been grouped under the head "natives" and are of the same scientific value as those

of Curjel, although this particular biological character happened to be, as it should be, their main basis. The menarcheal age has nowhere been precisely stated, *e. g.*, in the case of Bengal Hindus it has been stated: "the age of puberty among girls is between 11 and 13 and generally in the 12th year". Immediately after the above sentence the report states: "It does not differ in different communities". This statement was made without adequate proof and that this is wrong, will be evident from our subsequent observations. It has been found in western countries that girls in a better socio-economic standard of life attain their menarche earlier. The Age of Consent Enquiry Committee did not take into account this fact at all, although Curjel's sample from college girls indicated it to some extent. It appears that the Committee based their report on very rough and low averages. Curjel found an average of 13·6 years for all the communities while the Age of Consent Committee took it at 12 years.

All these defects in the report, however, show not only the need of a human biologist in such fields of investigation but also a real scientific angle of vision. Field methods in anthropology are now well established and in such investigations no indirect method of study should be resorted to. The Committee spent a sum of Rs. 2,88,614 towards this enquiry and with its men and money behind it, could have done some first-rate scientific work by finding out accurate dates of birth and menarche of the girls in the various provinces. There are still a large number of families where horoscopes are maintained for all the children born in the family. In the case of rural girls, married young, *garbhadhan* ceremony is also held, where from the dates of menarche could also have been obtained.

In this connection it is worthwhile mentioning a few words on the so many controversies on early marriage and the physical deterioration of the girl mothers. I am quoting here an authority of the rank of Pitt Rivers[39], whose works were also published before the report of the Age of Consent Enquiry Committee:

"In passing we may refer to the general and almost unchallenged assumption made by Europeons that the child-marriages common among Oriental peoples must necessarily be held responsible for serious physical damage to the women, and adversely, their future fertility. There appears, however, to be no evidence that child marriages nor even the custom of pre-nubile intercourse (common among Oceanic peoples) have any harmful consequences, and the

conviction of its harmfulnesss is in all probability a superstition arising from the same causes as the demand so passionately advocated in England by sexually dissatisfied women and sexually starved men that the female age of consent should again be postponed beyond the age fixed by existing law".

With a view to find out the present menarcheal age of the Bengali girls and its differential behaviour in the different communities my student Miss Tulika Sen was engaged to carry out a survey of this phenomenon among the various caste groups in Calcutta and a rural low caste people, of the name of Bagdis in the village of Moydah, 24 parganas, West Bengal. All the data were collected by Miss Sen after a personal interview in the family and the accuracy of the Calcutta sample can be vouchsafed according to the standard of Prof. Crew. There are a number of cases where the dates of birth and menarche are known to the day. Of the rest the dates are known correct to the month. All these have been separately shown below. The Bagdi sample suffers from this accuracy due to obvious reasons. These people rarely remember their dates of birth. The age estimated firstly by Miss Sen, were not only checked by me, as being a native of this village I have known many of them being born, but also by a few other elderly inhabitants of the village, many of whom have grown up with these Bagdis. Further, I was able to provide Miss Sen with two old Bagdi women as her guides and one of these two old women, aged about 50, has an exceptional ability in remembering many events of her people. Although she rarely remembered the exact age in numbers, she was extremely helpful in comparative statements, as to who is elder and who is younger. The menarche is still ceremonially observed among this people and is an event which is ostensibly celebrated in the village. It is termed *punarbie* (second marriage) among these people and is almost as expensive as the marriage itself. Thus the menarche was found to be more remembered than the birth and as such there is lesser variation in the former than the latter.

The figures obtained by Miss Sen are as follows :

		Average at menarche in yrs. mean S.E.	S. D.
Calcutta Brahmans (153)	...	12.70±0.10	1.28
" Vaidyas (275)	...	12.70±0.08	1.38

Calcutta Kayasthas (219)	...	12.87±0.08	1.16
Calcutta Total (647)	...	12.78±0.05	1.27
Bagdis of Moydah, 24 Pergs. W. Bengal (60)		13.25±0.15	1.19
Nayars of Travancor (74)	...	14.29±0.19	1.67

It will be of interest to mention here the remark of the Age of Consent Committee that there is no difference in menarcheal age between the different communities. Applying the 't' test it has been found that while the three Calcutta castes are not significantly different from one another, the Bagdis of West Bengal and the Nayars of Travancore are significantly different samples. The values of 't' between the upper castes (combined) and the Bagdis and the Nayars are 2.94 and 6.80 respectively.

Out of the total number of 647 city girls only 44 were able to tell their menarcheal ages and dates of birth correct upto the day. Their averages are :

		Yr.	Mo.	D.
Brahmans (11)	...	12	5	19
Vaidyas (17)	...	13	0	26
Kayasthas (16)	...	12	6	26
Total (44) ...	...	12	8	26

This yields an average of 12.74 years which agrees very well with the average of 12.78 years obtained from the larger sample of 647.

The Nayar sample was collected at my instance by Mrs. Parukutty Baruah, a Nayar herself, and a lecturer of Biology in a women's college. There were a number of cases where the dates of birth and menarche are accurately known. Considering the high amount of literacy among these people and in this State and that the date were collected under my guidance by a biologist herself, they can be very well counted upon as trust-worthy.

The above data could not be compared with any other existing data and as such we cannot judge the trend of the menarcheal age of the Bengali girls. There are, however, indications that in this country as well, the menarcheal age is going down; as with the exception of the Age of Consent Committee, who assumed it to be 12 years in the case of Bengal, all previous records are in favour of putting it between 13—14 years. If really the Bengali girls are attaining an earlier mat-

urity than before, we can very well assume that the other factors associated with it—the premenarcheal acceleration, the sterility interval, the first conception, etc, are also changing. These are vital factors in the biology of a nation and we will be mistaken if we are not alert on this growing situation.

(*b*) *Population*:—After we have discussed puberty, maturity, early marriage, etc., it is fitting that we turn our attention to the population problems of India. Much has been written on this problem but few have taken into account the deeper biology of this phenomenon. The majority of the writers are economists and as such their angle of vision has been mainly controlled by the law of supply and demand. A few have gone so far as to predict the future growth of Indian population to 400 million. Titmuss[30] has rightly pointed out that these speculations are only "statistical exercises". To quote him: "Because of these dynamic and ever-changing characteristics it must be always a hazardous affair to speculate about the future size and structure of a population. There are many reasons why we should not describe these speculations as forecasts, but only as statistical exercises". He has also shown the fate of the "eighteen exercises in demographic forecasting" in Great Britain.

The alarm of the "teeming millions" is however entirely unwarranted Thompson[35] is of opinion: "What happened in India prior to 1921 shows the general pattern of what has happened throughout most of human history up to the development of machine industry and modern sanitation" and "that even before 1921 conditions in India were somewhat more favourable for growth than was normal in ages past". The census of 1921 showed a great decline in growth; the increase over 1911 population being only 0.9%. Thompson has also shown that the recorded mortality during 1911-21 is very much low and his estimate of mortality is 22-23 million during this decade. To me, it appears that Nature was pulling up this arrear of the 1911-21 decade in the next two decades. Although it will be astrological in nature to say anything of the population of 1951, we can, however, very well say that decade 1941-51 has been a decade of disasters. This decade saw the termination of the World War II, the Bengal famine of 1943-44 and the many communal riots before and after the political partition of the country. The Bengal famine took a toll of 2-3 million lives but the exact number of men slaughtered in the riots will never be known—at least a war would not have killed so many. Then the number of accidents, attendant to the present civilization, causing

deaths, the railway accidents, aeroplane crashes, mining accidents, etc. are gradually increasing. Not a few people are killed in road accidents. Sir Arthur MacNalty[30] has pointed out that five children on the average are killed daily in road accidents in London.

The population experts of this country are all fascinated by the principles of the western countries and some have advocated for a population policy for this country—a policy not for increasing the population but for decreasing it. Thompson has very aptly pointed out that the steady growth of the western countries is the *unusual*, "while fluctuations in growth, as in India, are far more usual in the experience of mankind."

The recent report of the Royal Commission of British population and Titmuss's chapter on "The Statistics of Parenthood" in the book "Rebuilding Family Life in the Post-war World" already referred to, have brought out new facts on population problems. Researches along these lines are urgently necessary in this country as well, as whatever has been said so far on Indian populations are all unaided by any kind of biological study. Fertility of women, specially in the cities have been definitely affected by late marriages and the growing attitude of young men and women towards the social ideals of the west are not at all conducive to the healthy growth of any population.

The biologists' role in a study of population problems are manifold. We have to measure as accurately as possible the differential fertility of the different groups of peoples. We must know the net reproductive index of each group, whether every mother is being replaced by another. It is deplorable to find that out of the 28 countries enlisted by Titmuss, 16 countries are below replacement level and India could not be in the list obviously for want of statistics. Kuczynscki has calculated that the white men as a whole, with the exception of the Soviet Union, are not replacing themselves after 1932. The World war II must have worsened this situation further.

Then there are many other biological factors which have to be taken into account. We do not know the frequency of involuntary sterility of any population in this country. How much of it is due to males and how much to females? What is the frequency of intersexes or hermaphrodites or pseudo-hermaphrodites? The latter group of people is a common sight in Calcutta streets. They form an isolated community by themselves and mostly earn their livelihood by charity. Since this community of biological wonder is not gradually dying out or appreciably decreasing, it will not be unnatural to assume that there has

been a steady and constant recruitment into the fold. We have no knowledge of their numbers in each census and I have always wondered as to how they have been sexed. This aberrant and unproductive population should be separately treated, at least an attempt should be made to determine its frequency in the ensuing census. These subjects form ideal material for the study of human genetics. Petterson and Bonnier [28] from Sweden have already pointed out the hereditary nature of these hnman intersexes. These individuals do not breed and if there has been a steady replacement of this isolated community we can ascribe it to some kind of genetic behaviour. We could have formed an idea had there been some kind of population figures for the last few decades. I put special emphasis on this point, as this Congress will be holding its session on the eve of a Census. There are also a few cases hidden up in the families. I have known of three instances where these individuals were married only to be separated. In fact, there is a tradition that all the professioal eunuchs were once married. We will have the occasion to dicuss later on the introduction of compulsory medical examination before marriages and the marriage of the intersexes can only be stopped by it.

The ban on widow marriages among the Hindus has been an effective check on the growth of the Hindu population. The almost complete replacement of the Hindus of the East Bengal, now in Pakistan, by the faster growth of the Muslims in the same country, is to some extent due to the prohibition of widow marriage. Mr. T. C. Das from this very Presidential Chair in 1941 at the Banaras session of this Congress pointed out that "this (widow marriage) law should be turned into a coercive one in the interest of national welfare." Mr. Das's suggestion was based on the studies of Mr. J. M. Dutta, but the population experts of our country have never stressed this point. Besides the high caste Hindus, this contagion of banning widow marriage is fast spreading among the lower castes of Bengal. We must take a serious view of this situation as we cannot afford to lose the active food growers of the country.

(c) *Anthropometry:*—In this country physical anthropology is still largely confined to racial diagnosis and the chief method followed is anthropometry. Prof. Bartlett[3] has very rightly discussed its use in Huxley Memorial Lecture of 1943. He has suggested its reconstruction by the building up of "functional anthropometry" It is extremely urgent for our country since the western countries have already been benefitted by such studies. Prof. H. J. Fleure's studies on the physical

types of Wales and their corelations with tuberculosis as worked out by Bowen[4] can be very well taken up in this country. Can we not identify a tubercular type in this country? Prof. Bartlett has also pointed out the defects of quantitative analysis of qualitative characters. This point of view should also be remembered.

(d) *Finger prints.*—This brings us to the sad neglect of the many qualitative characters of the human body. The finger prints in spite of their being most varied in character—not being equal even in a pair of conjoined twin—have been scantily applied in studies of human variation. This has resulted in the complete absence of data from the extinct varieties of mankind. Only three finger prints of the vanishing Veddas of Ceylon are known from the post-mortem studies of Prof. Osman Hill[23], who found a high frequency of radial loops among them. Radial loops are found in the least number among the few human groups recorded in India and Osman Hill's observations require extensive studies immediately.

The most active interest in this branch of knowledge was shown by the Germans, specially the Vienna school led by Prof. Joseph Weninger and his wife Margaret. Margaret Weninger was preceded by another woman scientist from Norway, Prof. Kristine Bonnevie, who first offered a genetic explanation of the finger prints. Her method was being actively pursued in Germany till the beginning of World war II, but it is astonishing to find the stolid silence of the other countries over Bonnevie's hypothesis. The Kaiser Wilhelm Institute for Anthropologie, under the distinguished guidance of Prof. Eugen Fischer, took up very seriously this particular problem from so many angles, that almost all the students, internal and international, joining the above institute, were engaged on some problems allied to finger prints and had the Institute not been closed down by the Allied authorities in the Summer of 1944, some specific result could have been achieved. At the present moment, I am not aware of any other country which is equipped with that much of ground-work that Germany, particularly the above Institute, had done.

Apart from the scientific value of finger prints which gives us an idea of the nature of human variation, its practical utility for human welfare, has not been thoroughly exploited. The various kinds of frauds and forgeries can be completely stopped if the finger prints are made use of in place of signatures in all cases of personal identification. It is extremely unscientific if such a variable character of Nature is not used as the chief instrument of identification. Brewster[5] has very

rightly pointed out that had the Bhowal Kumar possessed a finger print in his life insurance policy this historic case would have been settled in a few minutes. All such important documents like life insurance policies, identity cards, passport, etc., should always be supported by finger prints, if identification in its true sense is desired. At the same time, it is the duty of the anthropologist to bring home to the public and the State, the utility of this character, not only in the detection of criminals, but also its importance in all transactions in which personal identification is involved. The employment of finger print experts in all institutions dealing with human identifications is essentially necessary to avoid the many difficulties arising out of frauds and forgeries.

(e) *Hospital statistics.*—In this country the clinical data of the indoor and outdoor patients attending the various hospitals are usually kept confined into the hospital registers and rarely used for human welfare. A few of the important cases are published from time to time in the medical journals but there is no arrangement for the entire data being published as the legal cases of the law courts are done. But until no such arrangements are made the people at large will be hardly benefitted. This is necessary, firstly, to avoid marital contacts between tainted persons affected with cancer, tuberculosis, diabetes, leprosy, lunacy, veneral diseases, etc., secondly to find out the number of persons affected as such and thirdly, to find out accurately the gradual increase or decrease of a particular malady. A few years ago the late Dr. Jaharlal Ghosh[13] published a fairly complete pedigree of a hemophiliac family from East Bengal, which was subsequently taken up by me. It was found out that a large number of girls of the family are of marriageable age and their parents were contacting parties for their marriage. I found only one father who was conscious of the grave dangers of such unions. It is not known how many of them have by now married and spread this grave disease further into other families. This is one of the many cases, and hemophilia, because of its rarity and peculiar nature found a quick place in a medical journal: but in the case of common diseases there are hardly any regular records.

This is definitely a method by which certain diseases can be fought out. There should be a central body where all the case records of the various hospitals could be sent for classification and publication. The central body should be the source of public information. Time is ripe enough for compulsory medical examination before all marriages

as so many diseases are being transmitted unawares into various families. Marriage hygiene is yet unknown in this country and its development is an immediate necessity. Denmark, through her Copenhegen Institute of Human Genetics, is enlisting all the hereditary defectives of the State and such an all out effort for enlisting the dysgenic elements of this country through a central body should be started at an early date. The above Central body can be referred to for any tainted element undesireable for marriage. This Central body should be of the name of Bureau of Human Heredity and this should be a part of our national programme.

Such an organization is all the more necessary due to our modern ways of living. A tubercular man of money goes on spreading infection from one place to another while a poor man finds his end very soon. The more the infection theory of the causation of diseases is gaining ground the more has been the chances of infection due to facilitated communication in our every day life. Prof. A. C. Ukil's recent Presidential Address before the All India Tuberculosis Worker's Conference, shows that this scourge of mankind is gradually increasing in this country along with machine industry and that there are about ten million active tuberculosis cases, of which 40-50% are in the infective stage. He is of opinion that the average rate of infection in this country is still lower than that of the western countries. The role of heredity in tuberculosis has always been underrated in spite of the pioneer works by Germany and U. S. A., where controlled studies have been done on twins. The present author pointed out this fact long ago in the bulletin of the Indian Eugenics Society while referring to the high incident of the disease among the female students of schools and colleges. Since the latter are not exposed to the hardships of married women and they usually come from somewhat well-off families, it is not unlikely that these female students are already hereditarily disposed towards tuberculosis.

(*f*) *Applied human heredity.*—In this country the science of human heredity has not much progressed, although in the western countries it has already attained so much perfection that it is being used in cases of paternity diagnosis. A perfection in this branch of science is, however essential in view of the recent Hindu Code Bill with the passing of which divorce will be legalised. Paternity diagnosis is not necessary in cases of illegitimacy only, but it is required when a biological paternity has to be determined in the case of a quickly following marriage of a divorced woman. It has often been seen that in this country cases

of disputed paternity are never referred to any scientific body but are always settled by courts of law. Many western countries have already changed their procedure by which the law courts give their verdicts after they have the expert opinion of science.

BIOLOGICAL STUDIES OF FAMILY

Human biology is no less related to Sociology—a specialised branch of study known as social biology. Under this head society is studied as a biological product just as all its members are. The biological background of society is family which has been aptly defined by Sir Arthur MacNalty as "the unit of race." Guy Brown[6] has called it "a universal culture pattern". According to Nimkoff[29], it "is the basic social unit in the development of human personality". He also points out the need of studying family as a phenomenon which "represent the impact of influence from several different fields (biological, heredity, culture and group)."

The varied aspects of family has been discussed in the light of modern biology in the little valuable book, "Rebuilding Family Life in the Post-war World", already referred to. This book, though represents the conditions of Great Britain, contains informations worthy to be followed by any modern society. Family life in the west is changing its attitude which is reflected in increasing divorces, lower birth rates, *etc.*, In U. S. A. family life has been extremely unstable owing to rising divorce rates, which went up in the proportion of 1 in every 3 marriages during 1945. Burgess has pointed out that the divorce rate in U. S. A. has averaged a 3% increase each year since the civil war. He has also shown that the modern family in U. S. A. is characterized by the following distinctive trends:

1. *Modifiability and adaptability* in response to conditions of rapid social change.
2. *Urbanization* showing not only increase in proportion of families in cities but also in the rural families adopting urban ways of life.
3. *Secularization* showing the declining control of religion and increasing role of material comforts, labour saving devices and other mechanical contrivances like the automobile, the radio, and television.
4. *Instability* as evidenced by the increase in divorce.
5. *Specialization* of the functions of the giving and receiving of affection, bearing and rearing of children, and personality

development, followed by the loss of extrinsic functions such as economic production, eduction, religious training and protection.

6. *The trend to companionship*, with emphasis upon consensus, common interests, democratic relations, and personal happiness of family members.

No less is the influence of modern industries on family life. The Lynds [20] in their famous work "Middletown" have shown the increasing frequency of the children breaking off their parent's occupation and the effect of the modern industries in shortening the active period of work in an individual. The Lynds have shown that a machine-man is spent up by the age of 40 and a man above 40 is rarely wanted as they cannot keep pace with the speed of a modern machine. These two points are of vital interest for the harmony of family life. They are also sources of tension between the father and the son.

It is now worth while examining the conditions in this country in the light of what we have said of the West. Acculturation is rapidly going on in every sphere of our society and time is ripe enough that our sociologists now take stock of this process in our own societies. We have copied many traits of the West but how far they have been of benefit to us? If they have done us more harm than good, we must now cry halt to them. Anthropologists in this country have always been busy in studying primitive societies but they should now take up their own societies for thorough investigation. Of the six points of Burgess mentioned before, all excepting the 4th *i. e. instability* are more or less evident in the present day Bengali society. *Urbanization, secularization* and *trend to companionship* are definitely showing signs of increase among the young men and women. The passing of the Hindu Code Bill will at once give a handle to the 4th point of Burgess, *i. e., instability*. Certain sections of the people in this country, who under the protection of civil laws or some other socio-religious groups, are already enjoying the facilities of divorce and their family adjustments should be the criteria for the extension of the divorce laws in the whole country. Unfortunately there has been no such social study and the new laws will be enforced without a proper sociological enquiry. The American researches into the social and psychological factors of marriage, indicate that the most frequent causes of unhappiness in marriage are mainly temperamental. This temperamental differences are likely to increase with increasing secularization—a trend which is gradually extending its field along

with the processes of acculturation and industrialization. Further, both the trends of urbanization and secularization are effective in growing a feeling of dependency—so marked among young men and women of this country. This is seen so well in the late attainment of independent status of the present day young men, specially those who go up for higher studies in medicine, law or engineering. Burgess has mentioned the "declining control of religion" within the trend of *secularization*. This is also well marked in our present day young men and women, who, so to say, look down upon the old customs and ceremonies. With all these trends of the western societies in our present social order, it is doubtful that the divorce laws will be of any social benefit. There is no chance of any immediate retrogression to our old ideals—we have not yet cried a halt in our mad rush for the western civilization.

RACE AND MATING SYSTEM

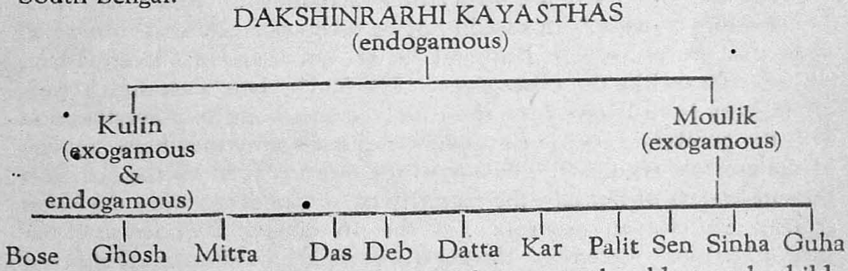
In recent years, enough has been written on the use of the term 'race'. Huxley and Haddon [16] are in favour of using the "non-committal term ethnic group" in place of race. Nilsson [23] has used a neutral word *variant* (neutrale Wort Variante) for race. I have already referred to Darlington's article on "Race, Class and Mating System in the Evolution of Man" at the beginning of this paper and I take the liberty of freely quoting his views on this controversial question of race. Darlington[10] has shown how races are formed from a mating group differentiated by the "unified selective response" at three levels —the environmental, the genetic, and the jointly genetic and environmental, cultural, levels. To quote him: "The conditions of survival and reproduction of the individuals produced by the recombinations of genes and chromosomes are different in different countries, climates and ways of life. With two inbred groups, the cross breeding of which is prevented, the *point* at which we shall begin to refer to them as races is then a question of *ad hoc* convenience. We can merely say that the *point* will be reached more quickly if the groups are smaller; if the original difference between them, and the heterogeneity within them, are greater; if their selection is more rigorous or more divergent".

Race formation, according to Darlington, is aided by two processes : (*a*) physical limits and (*b*) social limits. The former is due to geographical position and the latter is due to man's intellectual discrimination. When the cultural barrier arises from the physical limitation we have the characteristic origin of race. When it arises

form a social differentiation we have the origin of class. When the two are combined and stabilized we get the formal climax of caste in India.

One fact, which is of special importance to anthropologists, is Darlington's opinion about the homogeneity of human races and classes. This is contrary to the opinion so frequently expressed about mixed races. It is obviously due to the imperfect knowledge of human variation and the popular anthropological quest of finding out racial elements in a certain population.

This brings us to the mating groups in man. Authorities have differently estimated the size of a mating group in man. In India, where according to Darlington, "the endogamous caste system has preserved a store of variation which, if released by free crossing or recombination, might well enable us to reconstruct the whole genetic range of mankind", these mating groups are still rigidly protected by "the combination of inbreeding and outbreeding in parallel". Let us take here an endogamous territorial division of the Kayastha caste of South Bengal.



According to the orthodox rules of marriage the eldest male child of the *Kulin* community must marry a *Kulin* girl. The other children can marry wherever a mate is available outside his own clan. The *Moulik* group on the other hand must marry their sons and daughters to the *Kulin* group. Thus the eldest son of a *Kulin* has to choose his mate from only two clans whereas the other children can select theirs from any of the other 10 clans. This advantage on the part of the *Kulins* led to polygamy* in Bengal during the eariler centuries. At the same time the *Kulins* had to provide both boys and girls for the other 8 clans, which could only be possible because of their high fertility. This can be yet seen in many a *Kulin* household and a high preponderance of female children over males is a characteristic of the *Kulin* families. This will be apparent from the figures of the net reproduc-

*The author probably refers to polygyny (Ed.)

tive index of the different matings between *Kulin* and *Mouliks*, given below :—

Matings	No.	†	§	Total	Net Rep. Ind.
1. Kulin † × Kulin	.. 22	65	93	158	4.23
2. Kulin † × Moulik	.. 22	91	106	197	4.82
3. Moulik† × Kulin	.. 20	75	68	143	3.40

The above matings are mostly of dead persons, collected from their children and those who have passed child bearing age. It will be seen from the above figures that the high fertility of the first two matings is characterized by a high preponderance of females over males, whereas the last mating group shows a lower fertility and a high masculinity. This is definitely the action of selection which according to Darlington "is continually changing the character of the chromosome pool by differences of survival and of fertility."

The "differences of survival" is also apparent in some of the *Moulik* clans in South Bengal. There are only a few *Sen* clans belonging to the Kayastha caste, while there are now probably no *Guha* clan in South Bengal. There are no accurate statistics of these clans and the statements made here should not be taken as final. It is, however, clear that the clans, *Kar*, *Palit* and *Sen* are not frequently met with in all the villages like the other clans. The *Kulin* clans with their superior fertility have always been the ruling clans among the Kayasthas and with the combined effect of exogamy and endogamy they have achieved the greatest efficiency. This is all the more proved by the past and present leaders of Bengal—the majority of whom come from the *Kulin* group. To cite an example: Of the 16 Bengali Presidents of the Indian National Congress, during the years 1885-1950, nine belonged to the Kayastha caste of which 8 belonged to the *Kulin* group.

NATIONAL EUGENICS

In the foregoing pages we have discussed the various fundamental problems of human biology. The final aim of all this is to make an individual healthy in mind and body and thus build a healthy nation. In 1941, the present author wrote in the Bulletin of the then Indian Eugenics Society : "The upper class Bengali society is passing through a restless stage because of its marriage problems. The present Bengali society thinks it almost a social duty to get the womenfolk married early or late, but there is no obligation on the part of the men. Due to the large number of males remaining unmarried upto a sufficiently advanced age, there has been in recent years a tendency

*† Refers to male.
§ Refers to female.

towards high discrepancy between the ages of the husband and the wife. Due to the absence of compulsory registration of marriages in this country, there is no data to show that this discrepancy in age has any effect on the children, but there are reasons to believe that this probably acts as a strain on the connubial relations".

This position has further worsened within these ten years. Marriages are vitally concerned with economics and with economic condition of the country going down gradually, social conditions are also deteriorating. Time is ripe enough for a National Commission on marriage ; in fact it should have preceded any bill of the kind of Hindu Code Bill. It is more urgent than any of the population policies advocated by our population experts. Social conditions in England have gone so far that "approximately a million women of marriageable age who could never find a husband, even if none of the men remained single". With our high masculinity let us not face the contrary situation !

Our population experts are happy with the fact that Indian population is increasing. But what type of people are increasing ? Is it increasing in the same nature as shown by Griffing to have taken place in Brazil [15] and China [16], as reflected in the higher birth rates of the intelligentia of the two countries ? Griffing has called this phenomenon "Natural Eugenics." Nothing is known of this phenomenon in this country. Darlington is right in pointing out that "social promotion of men is favoured by the reduced fertility of their parents' which has been shown to be heritable" and this is evident in many present day Bengali families. In contrast a review of the scanty family records of the great sons of Bengal show that they were favoured with a high birth rate—a fact also corroborated by our findings of *Kulin* × *Moulik* marriages.

We are still banking on the achievements of these great men not only in the continuity of their germplasm but also in their master contributions to the entire make up of our culture. Bengal gave birth to a galaxy of distinguished men towards the beginning and middle of the 19th century(*ca.* 1820-1870) whose contributions have enriched this country in so many ways. Some of the lines of these great men have already ceased to exist, while all the descendants of the others are not capable of being as great as their ancestors, since new gene combinations are always taking place. Nilsson has shown why a great man's son is not always great. Therefore, for the well-being of the nation we must have always a continuous chain of intelligentia.

Modern Bengal has failed to continue the lineage of the 19th century. It is difficult to interpret this failure. But the science of National Eugenics, which owes its name and establishment to Francis Galton, will help us to find out wherein lies the defect and how to mend this deficit. And in support of this I conclude with Karl Pearson 26 :

"The progress of the race inevitably demands a dominant fertility in the fitter stocks. If that principle be not recognised as axiomatic by the mentally and bodily fit themselves, if the statesman does not accept it as a guide in social legislation, then the race will degenerate, until, sinking into barbarism, it may rise again through toilsome stages of purification by crude natural selection." *

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DISPOSAL OF THE DEAD AT THE INDUS VALLEY AND ITS SURVIVAL AMONG THE ABORIGINAL PEOPLES OF INDIA*

HARIBISHNU SARKAR

DISPOSAL of the dead is a fairly stable culture-trait. So much of human feelings are associated with it that no man except in case of exigency, would be prepared to change the traditional funeral ceremony. Thus, of all things available for the history of cultural heritage of a people, graves and "grave-furniture" are the safest material for its reconstruction. Divergences in the funeral practices at Harappa and Mohenjo-daro may well point to the fact that different peoples inhabited the Indus Valley. In this paper an attempt has been made to classify these different methods of disposal of the dead, and also to trace their continuity among the aboriginal peoples of India.

DISPOSAL OF THE DEAD AT THE INDUS VALLEY

Sir John Marshall has classified three types of burials, namely, (1) complete burial of doubtful character, (2) the so-called fractional burial[1] preceded by an exposure process and lastly, (3) the postcremation burial, being the common practice of the people of the Indus Valley. These terms in Marshall's classification though roughly indicate the practices prevalent at Mohenjo-daro, yet their substitution by (1) exposure, (2) inhumation and (3) cremation would be more appropriate, as these are the actual methods and processes involved in the disposal of the dead. In comparison with Mohenjo-

* Read before the Anthropology and Archaeology Section of the Indian Science Congress, Bangalore, 1951.

1 The term "fractional burial" which has been extensively used by Hargreaves (1929), Marshall (1931), Stein (1937) and Vats (1940) is a misnomer. When we do not know the circumstance, the method and the process involved in burials, such cases at best, may be termed as "incomplete burial." Graves are always subject to the subterranean changes of an alluvial soil and disintegration of bones due to absence or presence of some chemicals like lime etc., in the earth is not at all surprising. Cases of fractional burial at Mohenjo-daro are extremely dubious and Marshall includes examples of post-exposure pot-burials under this category. There is no reason to ascribe burial No. H 699 (Plate LI) at Harrappa as a fractional burial.

daro, Harappa abounds in funeral remains, and the above classification cad be applied here also. The common practice of the original authors of the Indus Valley civilisation may have been to burn the dead and then to deposit a part of the cremated bones in earthen vessels. The great frequency of post-cremation urns at Harappa would testify to the view first propounded by Daya Ram Sahni that these ancient people practised cremation, resembling the *samadhis* of modern times. The following statistics compiled from Vats' Report show the high preponderance of post-cremation urn burials over the other two methods of the disposal of the dead at Harappa.

(1)	Remains of cremation		
	(post cremation urns)	...	230
(2)	Post exposure pot burials		
	(cemetery H. Str. 1)	...	118
3	Inhumation:—	...	93
	(Cem. tery H. Str. II)	...	33
	Cemetery R 37	...	57
	Mound AB	...	3

CLASSIFICATION ACCORDING TO THE PROCESSES INVOLVED

It is unlikely that a people of the same culture and of such a small area would take recourse to such dissimilar practices. Exposure, inhumation and cremation are entirely three different practices and it appears that exposure is the simplest and probably the earliest method of disposal of the dead. This process was, however, complicated at stratum I of Harappa by the exposed bone remains being interred in jars. This means that a single process was changed to a multiple process. The latter was also the process in the case of the post-cremation urns of the Indus Valley. As such a primary classification can be made with respect to the process involved:—(A) Single Process, in which the dead is disposed of once for all and is never disturbed after it is laid for eternal rest and (B) Multiple Process, in which the dead is first exposed to beasts and birds or kept on platforms till dessication or disintegration of the flesh and then the bones are collected for further disposal. Thus, of the Indus Valley practices only inhumation as seen in Stratum II of the Harappa cemetery falls under the category (A) or single process, whereas all the other practices of the Indus Valley fall under category (B) or multiple process. Culture contact might influence a single process to a multiple

process but a change from the latter to the former is probably difficult. At least the present day aborigines of India do not offer any such example.

INFANT BURIAL AT THE INDUS VALLEY

Harappa presents an uncommon feature in the disposal of dead children in stratum 1 of cemetery H. It has yielded eleven cases of children buried in embryonic position in the jars. But what about the babies of the II stratum? Either their bones have all disintegrated or they were not buried at all. Apart from two complete infant burials at Nal (in Graves A13 & 47) no other cases of child burial has yet come to light.

Separate treatment in disposal of children is still practised by the Hindus of Northern India and also by a few aboriginal tribes of India. Vats mentions that in the Southern Punjab even to this day, the Hindu babies are thrown into the river. There can hardly be any controversy on the question of exposure before the skeletons of Stratum I are lodged in the jars for burial in the cemetery H, but bodies of infants belonging to the same stratum were not probably exposed, otherwise it would have been entirely carried out by beasts and birds of prey. Similar disposal of the dead children in embryonic position in the jars is yet practised by the Memis of Assam (see table IV). Burying the dead in the embryonic position dates back to the Aurignacian epoch where a young man of 10-17 years of age has been found buried on the lap of an old woman at Grotte des Enfants, Grimaldi. It was universal in the case of children at Anau though an instance of an adult burial from South Kurgan is known. It was at one time widespread over a large geographical territory covering the shores of the Mediterranean Sea, Egypt, Palestine, Caucasus regions, *etc.* In the face of its wide range of diffusion and its presence at the I stratum among the children only, it may be inferred that the people of the II stratum at Harappa did not probably follow this practice at all.

SURVIVAL AMONG THE ABORIGINAL PEOPLES OF INDIA

A survey of the burial customs of the majority of the present day aboriginal tribes of India show the continued practice of the above three methods of disposal of the dead. In the following two tables (1 & 2) are given the distribution and classification of Single and Multiple Process, as well as the three methods of disposal of the dead among the various aboriginal population of India. Table No. 3 shows the distribution of house-burials among the different tribes of India.

TABLE I

Classification of tribes according to Single and Multiple processes involved in burial

A. Single process in burial is followed by the following tribes	B. Multiple process is involved in the burials of the following peoples.
Nagas of Burma (Hutton, 1931).	Khyeng of Arakan (Fryer, 1878).
Rengma Nagas (Mills, 1937).	Siyin of Chin Hills (Carey & Tuck, 1896).
Lhota Nagas (Mills, 1922).	Konyak Nagas (Haimedorf, 1949).
Sema Nagas (Hutton, 1921).	Phoms (Mills, 1922).
Angami Nagas (Hutton 1921).	Kalyo-Kengyu (Mills, 1922).
Memi Nagas (Hutton 1921.)	Mikirs (Stack, 1908).
Kacha Nagas (Hutton 1921.)	Khasis (Gurdon, 1907).
Ao Nagas (Mills, 1925).	Lushai tribes (Shakespear, 1912).
Chang (Mills, 1922).	Garos (Playfair, 1909).
Meitheis (Hodson, 1908).	Chakmas (Bose, 1931).
Thadou Kukis (Shaw, 1929).	Hos (Majumdar, 1927).
Purums (Das, 1945).	Oraons (Roy, 1928).
Kacharis (Endle, 1911).	Santals (Culshaw, 1949).
Abors (Dunbar, 1915).	Mundas (Roy, 1912).
Mishmi (Mills, 1922).	Bhils (Hendley, 1878).
Kharias (Roy & Roy, 1933).	Andamanese (Mouat, 1863).
Malers (Sarkar, 1938).	
Bhumij (Das, 1931).	
Birhors (Roy, 1925).	
Hill Bhuiyas (Roy, 1935).	
Gadabas (Haimendorf, 1943).	
Maria Gonds (Grigson, 1938).	
Bisonhorn Gonds (Grigson, 1938).	
Baiga (Elwin, 1939).	
Veddas (Seligman, 1911).	
Todas (Rivers, 1906).	
Reddis (Haimendorf, 1945).	
Chenchus (Haimendorf, 1943).	
Muduvans (Hutton, 1931).	
Uralis (Hutton. 1931).	
Kadar (Hutton, 1931).	
Paliyans (Hutton, 1931).	
Pardhans (Hivale 1946).	
Enadis (Raghavish, 1944).	
Nicoboris (Whitehead, 1924).	
Brahuis (Bray, 1913).	
Kafirs (Robertson, 1896).	

TABLE II

Classification of Tribes according to the different methods of disposal of the dead.*

Exposure	Inhumation	Cremation
Siyin of Chin	Nagas of Burma,	Khyeng of Arakan Mikirs,
Hills,	Rengma Nagas,	Khasis, Kacharis, Mishmi,
Konyak Nagas,	Lhota Nagas,	Garos, Chakmas, Hos,
Phoms, Chang,	Sema Nagas,	Bhumijas, Dudh Kharias,
Ao Nagas,	Angami Nagas,	Oraon, Mundas, Santals,
Thadou Kukis,	Kacha Nagas,	Birhors, Bhuiyas,
Lushais,	Memi, Chang,	Gadabas, Maria Gonds,
Kalyo-Kengyu	Meitheis,	Bisonhorn Gonds, Bhils,
	Thadou Kukis,	Todas, Enadis, Pardhans.
	Lushais, Purums,	
	Abors, Mishmi,	
	Bhumijas,	
	Kharias, Malers,	
	Birhors, Bhuiyas,	
	Maria Gonds, Baiga,	
	Veddas, Reddis,	
	Chenchus, Muduvans,	
	Uralis,	
	Kadar, Paliyas,	
	Pardhans,	
	Enadis,	
	Brahuis,	
	Kafirs, Nicobarese,	
	Andamanese.	

* Tribes following both cremation and inhumation or exposure and inhumation have been shown under both the categories. Attempt has been made to find out as far as practicable the original practice of the people.

TABLE III.

Disposal of the dead under house floors or near the house among aboriginal tribes of India*

Tribes	Place of disposal	Remarks
Nagas of Burma	Under or infront of the house	
Sokte	In family vault	
Rengmas (Eastern)	Under the bed or any corner of the house	In case of child
Sema Nagas	Inside the house	In case of child
Memi	Inside the house	In case of child
Kalyo-Kengyu	Inside the house	
Thadon Kukis	In front of the house	
Yachunge and Southern Sangtan	Inside the house	
Veddas	In caves	
Reddis	In front of the house	In case of child
Pradhans	In a corner of the house	In case of child

The table above shows that the majority of the tribes following the multiple process and the exposure method of disposal of the dead belong to the Mongolian race. The practice followed by the Siyias of Chin Hills has its counterpart in the method of disposal of the dead found among the stratum I people of the Cemetery H at Harappa. This tribe after a process of exposure to the weather puts the skeletal remains in a pot for final burial. That there are other tribes also who more or less follow similar practice of post-exposure pot-burials will be evident from the following table :—

*There are scanty evidence of house burial in the Indus Valley. A trace of it has been found at Harappa in Mound AB, where 3 skulls (3440 a, b, c) have been discoverad from under the floor of a house.

TABLE IV

Tribes	Method of disposal
Konyak Nagas	Exposure on platform followed by the separation of head from the decomposed body ; the skull is kept in a sandstone urn.
Memi	Children dying within 5 days of birth are buried in an old pot wrapped in old cloths.
Thandon Kukis	Both inhumation and exposure on platform are followed now. But separate burial of the head in an earthen pot has been mentioned by Shakespear (1912).
Lushais	Exposure followed by desiccation of skull which is buried in a pot.
Kalyo Kengyu	Exposure followed by dessication and urn burial successively. The bones of each corpse are placed in an earthen pot which is to be put at the back of the family granary.

CONCLUSION

In the light of the abave facts it appears that possibly a Mongolian people was responsible for the post-exposure jar burials of the stratum I of the Cemetery H. [1] The solitary instance of pot-burial found at Mohenjo-daro and classified by Marshall under the eategory of fractional burial, has yielded a skull which is Mongolian in type (Sewell & Guha). But we must wait for our final conclusion till the publication of Reports on the human remains from Harappa. Mackay has also pointed out a few Mongolian characteristics. Some of the masks (No. 2, 3, 4, 8, 9 in Pl. LXXVI) of superior workmanship

1 The exposure method of disposal of the dead is also confined among the modern Parsis but the evidence of the *Zend Avesta*)Fargard III, VI, VIII in the Vendidad) clearly points to the fact that it was Zoroaster who about 800 B C. introduced this method of disposal of the dead. The adoption of exposure was "the sign of eonversion and the practice of inhumation according to the teachings of zoroaster is "one of the most heinous sins that can be committed." (cf: The *Zend Avesta Part I*, translated by J. Darmester, page XIV in the *Sacred Book of the East No.* IV). The exposure, is not probably the original method of disposal of the dead amongst the Indo-Iranians

discoverd at Mohenjo-daro and a white steatite deity (No. 7 in Pl. LXXXII, SD3008) have distinctly "oblique Mongolian eyes which were very carefully touched up". The short-horned Bull of the seals may represent the mithan of the Chin Hills, an animal with less curved horns and smaller in size than the bison. Tubes (Pl. CIX, 53) used for drinking beer and other liquids have their counterparts amongst the Chins of Burma who "use a straight hollow cane to suck up "Zu" (a sort of rice-beer).

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KOYAS

SYED KHAJA MAHBOOB HUSSAIN

THE primitive tribe of Koyas which is known as "Doralla Sattam" is generally found in Warangal, Karimnagar and Adilabad Districts of Hyderabad State. Their population according to the Census of 1941 is 31,094. The belief that Koyas (Adivasis) are the same as Gonds is not correct. They are not even the ancient strata of Veddic culture represented by the Chenchus, who still live on the same economic level as the Stone Age man, and never think of the morrow. They seem to be of the same stock of 'Kuis', *i. e.* 'Khandas' of Cuttack District and then migrated to the adjoining places and being away from the parent stock they lost their links. They forgot their own language and adopted the local language, Telugu; in the same way they adopted many local customs.

The Koyas claim to be the descendants of two sisters of the Pandavas. It is said that the younger sister had cursed the elder one to become a "Koya" meaning "like a stick having no sympathy" for the simple reason that the elder one had one day, finding a she-calf in the jungle hid it in her house without informing her sister, leaving her alone there. From that day the elder sister's children are known as Koyas and younger one's are Naikpods.

The cause for the Naikpods becoming poor is also another curse. A legend has it that Draupadi while in search for Pandava husbands enquired of the wayfarers if they had seen her husbands who intentionally evaded a correct reply. That is why the Naikpods seldom have grain in their houses, as according to the curse, if there was no grain in the field there would be no grain in their houses also. Naikpods are supposed to be superior to Koyas as Naikpods do not eat in Koya houses but Koyas can eat in Naikpod houses and Naikpods can have Koya women, but Koyas cannot have Naikpod girls in their keep. Naikpods of Kinwat Taluq, Adilabad District, speak Naiki dialect which is akin to Kolami.

Koyas are divided into twelve sub-divisions, *i. e.* Raj Koya, Koya, Manne Koya, Tumma Koya, Basa Koya, Moosa Koya, Gotta Koya, Chitta Koya, Banda Koya, Gumpa Koya, Chenchu Koya and Koya Naiku. Every sub-division has five 'Gottas' namely, three gotta, four gotta, five gotta, six gotta and seven gotta. 'Gottas' means gods.

Excepting Raj Koya, in other eleven sections they say that there are people of one gotta and two gotta clans but they are very small in number.

BIRTH

Among the Koyas it is customary that after child birth water is sprinkled over the mother and the child, and then they cut the cord. A bath is given on the third day, name on the fifth and the mother comes out on the seventh. Generally the names of the dead ones are given.

MARRIAGE

Marriage within the gotta is prohibited and so also inter-subdivision marriages. People of one sub-division do not eat with people of other subdivisions. Marrying maternal uncle's daughter is permissible but marrying father's sister's daughter is rather rare. Child marriage is uncommon. Naikpods have "Intiperu" house name of 50 to 60. Marrying within the families of the same "Intiperu" is not permissible. There are two kinds of marriages, (1) by capture and (2) a general marriage. Widow remarriage under "Marumanam" is possible, when the widow gets "Cheera Raiki" "Sari" and "Choli" from her second husband but ofcourse she cannot marry her husband's brothers or his nearest relations. Raj Koyas do not have marriage by capture. Polygyny is permitted generally when one has no children from the first wife, but polyandry is not allowed. "Ghar Jamai" called "Illitam" is usual. Raj Koya marriages are performed by Brahmins, the fees ranging from Rs. 2/- to Rs. 10/-, a tint of the modern fashion in the marriage being the presentation of a ring to the bride. Dowries are given with girls. Raj Koyas can marry other Koya girl as legalised keeps, but the Koyas cannot marry Raj Koya girls, and the children of such legalised keeps are not entitled to marry Raj Koya girls and thus they become degenerated as mere workers. The marriages of Koyas other than Raj Koyas are performed by barbers and washermen.

Men and women have equal rights to divorce their partners before the Panchayat, but in case of a woman, her second husband will have to pay bride-price ranging from Rs. 30/- to Rs. 60/- to her former husband. Eloping with another's wife is not prohibited, as the second husband has to pay bride-price to her former husband. Koya girls generally are mature at the age of 14 to 15 and boys at the age of 13 to 15. When a girl attains her age of puberty for the first time, "Samurta" menstrual ceremoney is performed. They are sexually

average but the Koyas who reside in hills and in interior forests are stronger owing to their diet.

Marriage generally takes place at the house of girls which ends in feasting, liquor playing a prominent part in it. The bridegroom generally brings a necklace, bangles and black beads. Wednesdays and tuesdays are supposed to be propitious days for marriage.

DEATH

Unmarried are buried while married are burnt. The people who die by epidemics like cholera, small-pox etc., are buried in all sections of Koyas. Among Raj Koyas Brahmin comes and performs the 'Karma' ceremony. After cremation all Hindu ceremonies are performed and while burying the dead the head is kept to the north and face to the east, but the body is not kept side-ways.

FEATURES & SPECIAL CHARACTERISTICS

They are generally medium in stature with dark and coarse features and those living in interior places have broad nose, full lips, small chin and low forehead. By nature they are lazy. Raj Koyas are more advanced than other Koyas who also use bows and arrows for game. They have got their own settlements with small grass huts and the Raj Koya women do paintings on their dung and mud coated bamboo walls. Yaws, i. e. "Kaya Rogam" is generally found among them and children suffer more than adults. They trust in nature for the cure of the same. Injection of 'theosarmine' have proved very beneficial for cure of yaws and a course of three to four injections cures it completely. There are many prehistoric monuments like stone caves in these forest areas and the local Koyas have got interesting stories about them. Their herbal knowledge is not worth mentioning and they are not quite famous for magic too.

FOOD PROCUREMENT

They are agriculturists by profession. The Koyas especially Raj Koyas generally live in plains. The Koyas who live on hills do hoe-cultivation. As they have got very insufficient land and depend upon crude methods of agriculture, the produce they get does not last long even for the most prosperous persons. Therefore they have to depend on wild and edible roots and fruits. They generally eat the roots known as (1) Tella chana gudda, (2) Nella chana gudda, (3) Vellere gudda, (4) Damer gudda, (5) Ali gudda, (6) Dumpa gudda etc. The first two are very poisonous and bitter in taste and to make them palatable and fit for consumption, they boil them several times, keep them in the running water and then pound them into flour. The

other roots are just boiled and eaten. Rice is a rare food and served at the time of feasts. They eat fish, fowls and flesh of animals and even beef, but Raj Koyas are not beef-eaters.

WHAT THEY WEAR

Raj Koyas wear clothes like other highcaste Hindus. Their women wear "cholis". Other Koyas have scanty dress consisting of a loin-cloth and a cloth wound round their head. Their women wear a "sari" flowing down to their knees and those who live on hills wear above the knees but have no "cholis". Children remain naked till about six to eight years, after which they wear a piece of cloth. There are no head dresses for dancing among Koyas, but Naikpods have their head dresses decorated with peacock feathers.

PANCHAYATS

Generally among 'Adivasis' their social solidarity is exhibited in the authority of the Panchayat, which controls them whenever there are disputes, claims or any breach of any custom, tradition and social etiquette. For this, four to six elders of the village and surrounding villages are called, who act as 'Panch' and decide the case. Penalty of Rs. 5/- to Rs. 10/- is generally imposed for minor offences, like lies, theft etc. The parties have to carry out the decision, otherwise they are socially boycotted and if they commit serious crimes like marrying inter-gottas or beating by shoes (chappals) etc., they are excommunicated; but after 'tappu' ceremony they are taken back into their fold. A portion of the fine is generally spent upon the feast of the 'Panch' and villagers and the rest go to the person who suffers.

Among Raj Koyas if the Panchayat's decision is not carried out by the parties the case goes to 'Dalval' who is 'Yetti Saina' which is hereditary. This man is given a *rupee* and a *rumal* for the decision.

INHERITANCE RULES

If a man dies, all his sons, parents and wife, get equal share out of the property he leaves behind, but not the daughters. If the daughter is married to 'Ghar Jamai', ullitam", she has a right to an equal share too. Wives are entitled to the benefit of the share so long as they remain unmarried. Elder son is given a big share known as 'Jesta' while among Lambaras, reverse is the case as the younger son gets double the share. If the deceased has no sons, "Illitam" wife and parents, the property goes to his nearest relations, first to brothers or their sons, otherwise to his sister's sons. And if there is none

of such relations, then the property goes to the community. If the daughters of the deceased are unmarried, their brothers are responsible for arranging their marriage in lieu of the share they get.

OATHS

Persons suspected of crimes are put to the test by oaths, and those who come out of the ordeal unscathed, are considered innocent. If a Koya is guilty, he never takes false oaths. They generally swear on 'Saralamma' 'Sadalamma' 'Bhagvanthulu', their house Devus. They also take oath by touching cows' tails. Naikpods even take oaths of Narsimha Swami and Lachmi Devi.

DEITIES

Like other Adivasis, Koyas also believe in the deities, gods and goddesses and have also much faith in ancestral spirits. Their main deities are Saralamma [mother] and Sadalamma [daughter] and Pagrida Raju [husband of Saralamma]. In addition to these three are Nagallamma, Kaikonda Sadalamma Paraboena Raju, Rekkal Ramlu, Gari Kamraju, Sura Gundiah, Narsimha Swami, Lachmi Devi etc.

FESTIVALS

Raj Koyas observe many Hindu festivals. They generally observe Ernuka Punam, Saranam Masa, Condial Chowti, Petra Masa, Dasera, Deepavali. Kedareshwar and Tilsankrat. But other Koyas and Naikpods observe Peddula Panduga, Dashera and Oogadi and Reepali, Coondurala Panduga etc. Peddula Panduga is observed in the month of 'Bhadun' generally on the last date of the month. When somebody is ill, it is assumed that some deity or ancester has been displeased, and to satisfy the deity or spirit of the ancester they perform some feast.

The main Jatra of the Koyas of Hyderabad is of Meraram of Muluq Taluq, Warangal District, where Saralamma and Sadalamma are worshipped once in two years in the Hindu month of 'Magh' on the full-moon day where many thousands of devotees assemble and fowls and animals are sacrificed to Mother Deity, but to the daughter deities no such sacrifices are given. Their shrines are imperfect superstructures and bear no statues, excepting some altars and wooden idols while the deities are supposed to be spirits. For Naikpods 'Kolakannadu' or "Pujarlu" come with "Pattam" i. e. photos from Bhadrachelam and recite tales of Pandavas and take their usual subscriptions and for Koyas "Dolavarlu" from Manthani and also their Guru 'Aiaj' come and do the performance.

OMENS

This Adivasi tribe has also superstitous beliefs and observe omens when they start out on professional work. If a cat or a snake crosses them, or a tiger comes towards them or some one sneezes once or if some one brings fuel towards them, the outgoing person stops at once. On the other hand, if they see jackals, red crows, water-pots etc., they think they are lucky.

DREAMS

They give much importance to dreams. The presence of a Brahmin, Jangam, tiger, house, Saralamma, Lachmi Devi etc., in a dream are good and monkey, deadman, buffalo, widow, epidemics like small-pox, cholera, *cheetal*, *samber* etc., bring bad luck.

LITERACY

The percentage of literacy among them is very low, i. e. hardly one per cent. A very negligible percentage who could read and write perhaps upto the second class was the only educational progress recorded about five years back. There were no outstanding personalities among them and due to their illiteracy they were exploited very much by more dynamic neighbours, and their sympathisers were also nil. In short, from a long time their economic, social and educational condition has deteriorated to such an extent that they had no land of their own, and having no economic holdings, low wages, seasonal unemployment, forced labour, denial of justice and a state of economic, educational and social distress, they were compelled to live on the meagrest means of subsistence, which ultimately led to such problems as servility, indebtedness, poor physique and many other conflicts, and they lagged far behind in material progress.

GOVERNMENT REFORMS

Government have therefore through the Social Service Department inaugurated a policy of their amelioration by including such aids and extending such help as was required in different situations and at different places and several welfare schemes like the Koya Education Scheme, and Koya Reclamation Scheme, in Warangal District, with a cost of Rs. 41,861/- and Rs. 3,28,000/- respectively which were sanctioned. They are being attracted to our way of life without disrupting their age-long traditions, culture and usages. The schemes are based on free allotment of land on the basis of necessary agricultural requirements, interest free *taccavi* loans for productive

purposes, collective and co-operative farming and improved gardening, veterinary and health facilities through mobile units, co-operative and grain banks, co-operative multi-purpose societies, necessary education, crafts, vocational guidance, adult education, settling their tenancy rights, liquidation of debts, providing the necessary commodities at subsidized prices, redress of forest grievances, supplying cattle on hire-purchase system and several other welfare facilities. Necessary educational facilities like free education, free supply of books, materials and stipends for teacher-candidates, mid-day meals, scholarships etc., were also, provided to infuse self-confidence and self-reliance through education based on social conduct with economic assistance and social security. So far two rural training centres one at Sudimalla and the other at Kamaram have been established, where Koya boys are trained as teachers and then they are posted in their villages as village teachers. All told 30 Koya village schools have been established and literate Koyas are being appointed in Government services. Further, the small Koya villages situated in the interior areas are being shifted to well planned rehabilitation centres which are being established by clear surgical operations of the Koya villages. The settlers are being supplied with lands and other necessaries.

Tribal areas have been notified under the Tribal Areas Rules and Regulations where the Adivasis have special regulations, thus vesting the administrations of criminal, civil and revenue jurisdiction in an Agent (Collector), Assistant Agent [Special Social service Officer] and the Tribal Panchayat. As a result of this, these areas are being administered according to their customs, without any delay and needless expenses for the poor tribal.

The provision of Tribal Policy in our Constitution of India regarding the notification of Scheduled Areas excluded from the ordinary operation of laws made by the Legislature where the Governor or Ruler assisted by a Tribes Advisory Council will have the power to make laws suited to the welfare of the tribals and the reservation of seats for them in the 'House of the People' and in the 'Legislative Assemblies' etc., have benefitted them a lot for they can develop a self-sufficient, prosperous and healthy tribal society in the Republic of India.

A STUDY OF THE REFUGEES

MINENDRA NATH BASU

ON the 15th August, 1947, India was divided into Pakistan and Indian Union. Streams of Hindu refugees from Eastern Pakistan poured into Indian Union mainly through Bongaon and Ranaghat—the two border railway stations. The refugees who entered India came mainly due to fear of moral and social prestige being lost, feeling the insecurity of life, and anticipating economic crisis.

Security of life, love, affection etc., are the real elements of human civilisation. When they are on the way to be lost the sentiments find their opportunities to display their grip on human mind. During the course of investigation I witnessed a number of refugee families consisting of father, mother and their dependent children had been residing on the platform of the railway station or under the trees on the road side.

The method of collection of data is an important factor in this inquiry. The genealogical method along with personal observation was employed for this.

The investigations were carried with the following questionnaires at Bongaon in November and December, 1947, on 100 familes consisting of 400 individuals.

Questionnaires :—

1. Name of the head of the family or unit.
2. His or her age, sex, religion, caste, civil condition.
3. Father's name or of the head of the family.
4. Name of the former permanent residence, (village)-Post Office or Police Station, District.
5. Present residence.
6. When was the home abandoned ?
7. Why it has been abandoned ?
8. Nature of the family-record in the form of genealogical table.
9. Father, mother, brother if any of the family head—their present condition and residence.
10. Number of members of the family dead during the time of abandonment and after abandonment of home.

11. Causes of death.
12. Assets of the family before and after leaving home.
13. What has become of the assets ?
14. Previous occupation of the man.
15. Is repatriation possible ? If so where the family or unit may possibly return ?
16. Is there any willingness to take up any work ? If so, nature of work.
17. How the family is maintaining itself now ?

I worked out the distribution of the sample population under different age-groups. Of these 20% are included in the age-group 0-5 years, 35% in the age-group 5-15 years, 38% in the age-group 15-50, 5% in the age-group of 50 and above. There are some for which the age could not be ascertained i. e. 2%

Out of 400 persons comprised in the sample 162 (40.5%) are men and 238 (59.5%) are women. Thus we have more women than men in the sample while undivided Bengal shows a greater number of men than women in its population at the censuses of 1931 and 1941.

Out of 400 refugees surveyed 120 (30%) are unmarried, 260 (65%) married and 20 (5%) widowed. Among the unmarried 40 (10%) are men and 80 (20%) are women. In the married groups there are 118 (29.5%) men and 142 (35.5%) women. The widowed group holds 4 (1%) men and 16 (4%) women.

In the sample studied both caste Hindu and scheduled castes are represented. The representations are of Brahmin, Kayastha, Baidya, Teli, Sutar, Napit, Dhoba, Kamar, Kumar, Kaibarta, Subarna Banik, Tanti, Jale (Malo and Rajbanshi), Namasudra and Barui.

Investigations were carried on 100 units (one unit being one family). The average number of persons in a unit was 4.0. On arranging the different districts according to the number of units contributed by each it is seen that the district Khulna heads the list with 38 units. The next place is occupied by Jessore—29, then Barisal—20 and Faridpur—12 and last Tipperah being one unit only.

The village folk of Bengal are generally unwilling to leave their homes. They do not like to go to a new place even for their livelihood when local employments are not available. Under such circumstances they usually adjust their necessities with small income they have in their home. They are even satisfied with one meal a day remaining in their home. Their ideal is to live and die where they are born.

But here in this case it is seen that many of these village folk were disrupted from their ancestral home. The causes of the abandonment of the home of the refugees dealt with here, as narrated by the refugee as well as from the data and on classification the causes of disruption and dislodgement according to these refugees are :—

1. Fear of moral and social prestige being lost.
2. Insecutity of life.
3. Anticipating economic crisis.

The collection of data was done on what had been the main occupation of the refugee units. Occupations of the individuals were not taken into consideration. The following main occupations of the refugee units of the sample are :—

1. Agriculture.
2. Daily Labour.
3. Arts and Crafts (inclding other occupations).
4. Fishing.
5. Miscellaneous.

In the Agriculture group there are 2 types of occupations and these form 35% in total.

1. Cultivating owners. 2. Tenant cultivators.

The daily labour group has 2 types with 20%.

1. Farm labour. 2. Combined cultivators and day labourers.

In the Arts and crafts group there are as many as 10, their total strength stands upto 30%.

1. Goldsmith.	6. Tailors.
2. Blacksmith.	7. Weavers.
3. Potters.	8. Barbers.
4. Masons.	9. Washermen.
5. Carpenters.	10. Paddy huskers.

Besides these there are some miscellaneous groups, 2%.

1. Milkman and Milk seller. 3. Boatmen.
2. Transport worker 4. Domestic servants.

The data on the nature of assets and debts of the refugees were collected but are not analysed to show their conditions in this paper. On the death column it was recorded nil.

The private individuals, the public Institutions, the state or the Government cannot feed a population for a long time. Gandhiji was also not in favour of feeding people without work. Works are to be allotted and on return the people should be given food, money etc. But how to find out such occupations for a huge population? The Scientific method tells us that first of all a thorough survey is essential for grouping the people and then find out suitable work for them. In this particular study of these refugees I have shown different lines of occupations for the people. 80 persons (36 men and 44 women) were given employment in the nature of dressing fish in the market, cutting betel nuts, preparing bidi, making broomsticks and paper baskets (Thonga,) carpentry works, washing of clothes, sweeping the place of their habitations, cowdung pasting on the plinths and yards of their habitations, repairing of the thatched huts, planting of arums, brinjals and small vegetable products in the fallow lands adjacent to their camps. The majority i.e. (28 men and 30 women) of the people are given the nature of work what they were doing in their original home.

I appeal to all my fellow workers to come forward with a scientific oultook and survey the population and then show them the right and proper ways of earning their livelihood. This, I believe, would be the real solution for rehabilitating the refugees. This should be taken up by all sections of the nation, the Statesmen, Businessmen, Social workers, Economists, Scientists, especially Anthropologists and Psychologists.

NOTICES OF BOOKS

D. N. MAJUMDAR. *The Affair's of a Tribe: a Study in Tribal Dynamics.* *Lucknow, India. Universal Publishers Ltd., 1950.* 367 *pp. (map, illus. plates).*

INDIA is fortunate to count Dr. D. N. Majumdar among her anthropologists. He is obviously a man of wide interests, both theoretical and practical, of great energy an above all, a diligent field worker. This last talent is not an easy one to pursue when difficulties in finding research funds are so great. Yet probably no country offers a greater variety of vital field research problems than India with its large tribal population, its infinitely varied rural communities, its many programs for social development, and the dynamic changes which its society is undergoing. Many more anthropologists, sociologists and social phychologists than India now possesses could be constructively enlisted in field work that would contribute to the coherent and informed solution of her problems.

It is precisely to one of these problems—that of tribal change in an economically and humanly important segment of India—that Dr. Majumdar addresses his inquiries with such success. He has after twelve years or more, returned once again to the Ho people of the Kolhan in Bihar to appraise their assets and liabilities in adapting themselves to the encroachment of local labour demands and Hindu cultural contacts.

Much of the descriptive material derives from the period of the mid-1930's when the Hos were suffering the effects of the world depression. Today they have passed through the demands of a war economy and are facing the problems of a free post-war India that is thoroughly aware of her tribal problems. In particular the last two chapters, "Responses to Contacts" and "The Prospect", exemplify the contribution that a sympathetic, informed and objective anthropologist can make to policy. The days are passing in all countries where its anthropologists can stand aside satisfied with antiquarian ethnographic descriptions of marginal peoples. The profession is learning to think with a new relevance and vigor about the contributions it can make to social life.

As in any broad and stimulating book of this kind, Dr. Majumdar leaves as many questions in the reader's mind as he has answered. The

author finds a good deal of the tribal life intact and in addition finds many exculsive traits still functioning that range from the continuance of traditional ceremonies and religious beliefs to the unwillingness of bilingual Hos to speak any language but their own. On the other hand he makes it amply evident that the inroads of a cash economy and of a growing class system have been acute. One wishes therefore that the book had treated systematically and with the author's considerable insight the role of class, status and prestige among the Ho. Such a discussion might give the reader more insight into his recommendation that the promotion of Ho welfare lay in supporting the prestige of the leading and educated Ho families. A careful study of prestige and status might also throw more light than even the author's present material on the social dysphoria produced by exorbitant bride prices.

One wonders why the Ho men are characterized as "weak, degenerate and short-lived" whereas "the women possess a fine physique, charming gait and admirable disposition" (p. 20). If this observation is valid, there is again an interesting and basic problem for investigation and elucidation in which the participation of a doctor and social psychologist might be needed. The section on physical anthropology which follows this generalization unfortunately belongs to that sterile school of anthropometrics and classification which adds little to the challenging generalization.

Another question raised by the chapter on "Crime and Custom" is the dynamics and presumably the inner motivations underlying the growing crime and suicide rate among the Ho, the "touchiness", the ready confession of transgressions, the desire to live life to the full, and a series of other points which are either merely alluded to by the author or discussed at some length. "The Affairs of a Tribe" also raises an interesting point in connexion with Dr. John Embree's recent article in the American Anthropologist (v. 52: 181-193, 1950) called "Thailand—a Loosely Structured Social System". Dr. Embree's thesis is that Thai cultural life permits considerable variation to individuals and that this loose but integrated structure has given Thai culture survival value. It would be interesting to have Dr. Majumdar scrutinize Dr. Embree's suggestions in the light of his Ho material.

Since it is the reviewer's duty to be critical one wonders why the author reviewed various schools of thought on constitutional and criminal types when this material is not applied to his dicussion of

crime among the Ho. The line drawings of material culture are so obscure that they become meaningless, particularly in the absence of any descriptive text or indeed any relevance to the main functional themes discussed so tellingly by the author. This absence of a parsimony, that would heighten the book for both professional and non-professional readers, is also evident in meaningless proliferation of suicide anecdotes, in the use of nine lines (p. 89) to say that the Ho have totemic exogamic septs and the repetition of comparable statements in at least three subsequent passages.

These negative comments are offered in no spirit of carping. On the contrary, the reviewer considers Dr. Majumdar's latest of many works so rich and valuable a document that any defect would come as a surprise.

World Health Organization
Geneva, 1951.

Cora Du Bois

THE SPLENDOUR THAT WAS EGYPT

By Margaret A. Murray, D. Litt., (Lond.)
Fellow of University College, London. Published by Sidgwick and Jackson Ltd., London. Price 30Sh net. Pages 354.

THIS treatise of fascinating study is mainly based on the works on ancient Egypt by Flinders Petire, the father of modern archaeology. Dr. Murray had been the fellow-worker of Flinders Petrie for many years in the University College, London, and thus being specially qualified to write on his works has very rightly added a separate chapter on Flinders Petrie.

Long history of Egyptian culture and civilisation has been generally surveyed and ably compressed in a single volume which is divided into seven sections, Pre-history, History, Social Conditions, Religion, Arts and Sciences, Language and Literature and .one on Flinders Petrie.

Dry climate and dry soil of Egypt have preserved the material that makes it possible to trace the course of her development from the barbarism of the remote past to the full flower of civilisation and then to its decay. No other country can show such a grandeur of material, such beauty of technical skill and so great a feeling for art over so long a period. The writer says, "where Greece and Rome can count their supremacy by the century, Egypt counts hers by the millennium and the remains of that splendour can even now eclipse the remains of any other ancient country in the world." Within the bounds of that little country there was evolved a civilisation which was the foundation of Greece, of Rome and finally of Britain.

The pre-history of Egypt is more important than it is elsewhere, for the social structure and religion can be seen there only a little less clearly than in the historic periods. The history of Egypt *i. e.* the period for which there is documentary evidence dates as far back as 4777 B. C. according to Petrie's calculation and a synopsis of dynastic rules is given here upto Cleopatra and the consequent of Octavius in 30 B. C. A list of 31 dynasties with the names of kings who ruled the country has been added in chronological order with references to dates according to various authorities. Marriages among the Pharaohs,

and matrilineal descent and succession to the throne have been separately discussed in the appendix portion. Genealogical tables are also given to establish marriages within any degree of consanguinity and they show that even instances of mother-son marriages and father-daughter marriages were not wanting.

The picture of social conditions of the people is vivid which covers the various aspects of human life, namely, Organisation; Law; Agriculture; Trade; Position of Women; Education; House and Towns; Furniture; Horses and Chariots; Food; Lighting; Dress; Pastimes. Egypt made many experiments and Ptolemic experiment of complete control by the State has a special interest. The writer excels in lucid expression in describing all these conditions and controls and the attitude of the people towards the State.

The religion of ancient Egypt had been misrepresented to the world mainly by the denunciations of the Prophets of Israel. They were shocked by the plurality of Egyptian Gods and the representation of the Deity in an animal form. Even Milton remarked of them as "the brutish Gods of Egypt". But the writer has endeavoured to bring to light the true spirit of Egyptian religion and in so doing has shown much sympathetic treatment and learned wisdom without any bias. In the course of a long chapter, religious changes with the change of social conditions and the gradual democratisation of ritual and beliefs have been discussed. Deities have been classified in to four categories: (1) Local Gods, (2) Osiris and attendant deities, (3) Deities without temples, (4) The Sun and other solar deities. These have been dealt with in details under respective heads and the survivals of those ancient practices and beliefs have been noted. The art of Egypt has also received great attention and apart from studying statues, especially bronzes, which hitherto had been the only object of study, other elements have been introduced. Egypt was the homeland of sciences, like, applied mathematics, medicine and astronomy. Engineering was a necessity as irrigation was a problem of life and death to the people. Canalisation was carried out successfully for purposes of tarde and war.

The spoken language of Egypt was reduced to a readable script about four thousand years before Christ. This monumental and decorative script was a source of amazement to the Greeks. Extracts from various branches of literature are given as samples which are the writer's own translation. The writer claims to have taken care not to

put the exactly equivalent words and not to keep alien construction of sentences in order to avoid stiffness. One love song is as follows:—

Come through the garden, love, to me.
My love is like each flower that blows;
Tall and straight as a young palm tree,
And in each cheek a sweet blush-rose

Over 200 illustrations in line, half-tone and colour have added to the value of the publication.

A. R. Choudhry

PERSIAN PAGEANT

By *George B. Walker*, M. A.
Published by Aryabarta Prakashan Griha, Calcutta.

THIS is a handbook on the splendour that was Persia and it very conveniently helps the reader to glance at different epochs which are the land-marks of Persia's glorious past. The author introduces the subject with the first entry of Persia into history i. e. in 606 B. C. out of the asbes of Nineveh, the great tyrant of the East. Then he goes on depicting the various scenes of Persian history together with the religious, social and cultural developments of the people right upto the present time, i. e. upto the capture of power by Reza Khan in 1926. There are three great peaks in the range of Persian history, namely, the Achaemenian, the Sasanian and Safavi dynasties. Though not in details, we find sufficiently informative symposium of how the old Persian Empire emerged from the ruins of Assyria, the Sasanians from the internal stresses of Rome and the Safavi, the last great dynasty of Persia, from the wreck of the Mongol Kingdom of the Il-Khans. Gallantry and bravery of the people secured for Zoroastrian Persia mighty empires and the writer endeavours to explode the myth of Thrmopylae and Marathan as described in the pages of Herodotus. The prime object of this treatise seems to be to display the cultural aptitude of the nation in the field of art, science and architecture. Persia culturally conquered barbaric Europe and the much talked of Arabic civilisation is an unhappy misnomer. The author asserts that Islamic civilisation is mainly Iranian as after the Arab

In fact the Arabs, had little to give and during the early days of the Prophet's mission there were only seventeen men of the tribe of Qaraysh, the aristocracy of Mecca, who could write. Fables of India (Bidpai's) reached Spain through Iran. Romance and lyrics, mathematics and Algebra, Science, Medicine and magic flowed from Iran and enlightened the backward Europe. Persian Engineers had the knowledge to divert the course of the Euphrates in the remote antiquity and the Palace of Persepolis was a wonder in the domain architecture.

The book contains a bibliography and an Index.